

100528.0007US1_ST25
SEQUENCE LISTING

<110> Neurogenex Co., Ltd.
 <120> ENHANCED INSERTED YELLOW FLUORESCENCE PROTEIN AND ITS
 <130> 100528.0007US1
 <140> US 10/506,925
 <141> 2004-09-07
 <150> KR10-2002-0012409
 <151> 2002-03-08
 <150> KR10-2002-0015217
 <151> 2002-03-21
 <150> KR10-2002-0015219
 <151> 2002-03-21
 <160> 16
 <170> PatentIn version 3.4
 <210> 1
 <211> 245
 <212> PRT
 <213> Artificial Sequence
 <220>
 <223> γ -citrine of fluorescence protein
 <400> 1
 Met Val Ser Lys Gly Glu Glu Leu Phe Thr Gly Val Val Pro Ile Leu
 1 5 10 15
 Val Glu Leu Asp Gly Asp Val Asn Gly His Lys Phe Ser Val Ser Gly
 20 25 30
 Glu Gly Glu Gly Asp Ala Thr Tyr Gly Lys Leu Thr Leu Lys Phe Ile
 35 40 45
 Cys Thr Thr Gly Lys Leu Pro Val Pro Trp Pro Thr Leu Val Thr Thr
 50 55 60
 Phe Gly Tyr Gly Leu Met Cys Phe Ala Arg Tyr Pro Asp His Met Lys
 65 70 75 80
 Gln His Asp Phe Phe Lys Ser Ala Met Pro Glu Gly Tyr Val Gln Glu
 85 90 95
 Arg Thr Ile Phe Phe Lys Asp Asp Gly Asn Tyr Lys Thr Arg Ala Glu
 100 105 110
 Val Lys Phe Glu Gly Asp Thr Leu Val Asn Arg Ile Glu Leu Lys Gly
 Page 1

115 120 100528.0007US1_ST25 125

Ile Asp Phe Lys Glu Asp Gly Asn Ile Leu Gly His Lys Leu Glu Tyr
130 135 140

Asn Tyr Gly Gly Ser Gly Ala Ser Asn Ser His Asn Val Tyr Ile Met
145 150 155 160

Ala Asp Lys Gln Lys Asn Gly Ile Lys Val Asn Phe Lys Ile Arg His
165 170 175

Asn Ile Glu Asp Gly Ser Val Gln Leu Ala Asp His Tyr Gln Gln Asn
180 185 190

Thr Pro Ile Gly Asp Gly Pro Val Leu Leu Pro Asp Asn His Tyr Leu
195 200 205

Ser Tyr Gln Ser Ala Leu Ser Lys Asp Pro Asn Glu Lys Arg Asp His
210 215 220

Met Val Leu Leu Glu Phe Val Thr Ala Ala Gly Ile Thr Leu Gly Met
225 230 235 240

Asp Glu Leu Tyr Lys
245

<210> 2
<211> 245
<212> PRT
<213> Artificial Sequence

<220>
<223> Peridot of fluorescence protein

<400> 2

Met Val Ser Lys Gly Glu Glu Leu Phe Thr Gly Val Val Pro Ile Leu
1 5 10 15

Val Glu Leu Asp Gly Asp Val Asn Gly His Lys Phe Ser Val Ser Gly
20 25 30

Glu Gly Glu Gly Asp Ala Thr Tyr Gly Lys Leu Thr Leu Lys Phe Ile
35 40 45

Cys Thr Thr Gly Lys Leu Pro Val Pro Trp Pro Thr Leu Val Thr Thr
50 55 60

Phe Gly Tyr Gly Leu Met Cys Phe Ala Arg Tyr Pro Asp His Met Lys
65 70 75 80

100528.0007US1_ST25

Gln His Asp Phe Phe Lys Ser Ala Met Pro Glu Gly Tyr Val Gln Glu
85 90 95

Arg Thr Ile Phe Phe Lys Asp Asp Gly Asn Tyr Lys Thr Arg Ala Glu
100 105 110

Val Lys Phe Glu Gly Asp Thr Leu Val Asn Arg Ile Glu Leu Lys Gly
115 120 125

Ile Asp Phe Lys Glu Asp Gly Asn Ile Leu Gly His Lys Leu Glu Tyr
130 135 140

Asn Tyr Gly Gly Ser Gly Ala Ser Asn Ser His Asn Val Tyr Ile Met
145 150 155 160

Ala Asp Lys Gln Lys Asn Gly Ile Lys Val Asn Phe Lys Ile Arg His
165 170 175

Asn Ile Glu Asp Gly Ser Val Gln Leu Ala Asp His Tyr Gln Gln Asn
180 185 190

Thr Pro Ile Gly Asp Gly Leu Val Leu Leu Pro Asp Asn His Tyr Leu
195 200 205

Ser Tyr Gln Ser Ala Leu Ser Lys Asp Pro Asn Glu Lys Arg Asp His
210 215 220

Met Val Leu Leu Glu Phe Val Thr Ala Ala Gly Ile Thr Ile Gly Met
225 230 235 240

Asp Glu Leu Tyr Lys
245

<210> 3
<211> 45
<212> DNA
<213> Artificial Sequence

<220>
<223> BamHI/SAB-F primer

<400> 3
gggggatcc gaggctggtg aggacgttgt ctgctgctcg atgtc

45

<210> 4
<211> 45
<212> DNA
<213> Artificial Sequence

100528.0007US1_ST25

```

<220>
<223> NheI/5AB-R primer

<400> 4
gggggctagc acctgtccat gtgtaggaca tcgagcagca gacaa      45

<210> 5
<211> 30
<212> DNA
<213> Artificial Sequence

<220>
<223> BamHI/CaM F primer

<400> 5
gggggatcca tgcattgacca actgacagaa      30

<210> 6
<211> 30
<212> DNA
<213> Artificial Sequence

<220>
<223> NheI/CaM R primer

<400> 6
ggggctagcc tttgctgtca tcatttgtac      30

<210> 7
<211> 34
<212> DNA
<213> Artificial Sequence

<220>
<223> Hind3/EYFP(Y145MEL)-F primer

<400> 7
ggggaagctt gggatggagc tcaacagcca caac      34

<210> 8
<211> 39
<212> DNA
<213> Artificial Sequence

<220>
<223> BamHI,NheI/Yins-R primer

<400> 8
gttgctagca ccggatccac cgtagttgta ctccagctt      39

<210> 9
<211> 39
<212> DNA
<213> Artificial Sequence

<220>
<223> BamHI,NheI/Yins-F primer

```

<400> 9
tacggtggat ccggtgctag caacagccac aacgtctat 39

<210> 10
<211> 33
<212> DNA
<213> Artificial Sequence

<220>
<223> NotI/EYFP(Y145GGT)-R primer

<400> 10
ggggcgcc gcctaggtag caccgttgta ctc 33

<210> 11
<211> 34
<212> DNA
<213> Artificial Sequence

<220>
<223> Hind3/EYFP(Y145MEL)-F primer

<400> 11
ggggaagctt gggtggagc tcaacagcca caac 34

<210> 12
<211> 33
<212> DNA
<213> Artificial Sequence

<220>
<223> NotI/EYFP(Y145GGT)-R primer

<400> 12
ggggcgcc gcctaggtag caccgttgta ctc 33

<210> 13
<211> 1182
<212> DNA
<213> Artificial Sequence

<220>
<223> Bio-Cart for Calcium

<400> 13
atggtgagca agggcgagga gctgttcacc ggggtggtgc ccattcctggt cgagctggac 60
ggcgacgtaa acggccacaa gttcagcgtg tccggcgagg gcgagggcga tgccacctac 120
ggcaagctga cctgaagtt catctgcacc accggcaagc tgcccggtgcc ctggcccacc 180
ctcgtgacta ctttcggcta cggcctgatg tgcttcgccc gctacccga ccacatgaag 240
cagcagcact tcttcaagtc cgccatgccc gaaggctacg tccaggagcg caccatcttc 300
ttcaaggagc acggcaacta caagaccgc gccgaggtga agttcgagg gcagaccctg 360
gtgaaccgca tcgagctgaa gggcatcgac ttcaaggagg acggcaacat cctggggcac 420

100528.0007US1_ST25

aagctggagt acaactacgg tggatccatg catgaccaac tgacagaaga gcagatcgca	480
gaatttaaag aggcctttctc cctatttgac aaggacgggg atgggacaat aacaaccaag	540
gagctgggga cggtgatgcg gtctctgggg cagaacccca cagaagcaga gctgcaggac	600
atgatcaatg aagtagatgc cgacggtaat ggcacaatcg acttccctga gttcctgaca	660
atgatggcaa gaaaaatgaa agacacagac agtgaagaag aaattagaga agcgttccgt	720
gtgtttgata aggatggcaa tggctacatc agtgcagcag agcttcgccca cgtgatgaca	780
aaccttgag agaatgtaac agatgaagag gttgatgaaa tgatcaggga agcagacatc	840
gatggggatg gtcaggtaaa ctacgaagag ttgtacaaa tgatgacagc aaaggctagc	900
aacagccaca acgtctatat catggccgac aagcagaaga acggcatcaa ggtgaacttc	960
aagatccgcc acaacatcga ggacggcagc gtgcagctcg ccgaccacta ccagcagaac	1020
acccccatcg gcgacggcct cgtgctgctg cccgacaacc actacctgag ctaccagtcc	1080
gccctgagca aagaccccaa cgagaagcgc gatcacatgg tcctgctgga gttcgtgacc	1140
gccgccggga tcactatcgg catggacgag ctgtacaagt aa	1182

<210> 14
 <211> 48
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> BamHI/DEVD F primer

<400> 14 gggggatccg ccatcaagaa tgaaggaaag agaaaaggcg acgaggtg	48
--	----

<210> 15
 <211> 49
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> NheI/DEVD R primer

<400> 15 ggggctagcg gccacttcac ctgttccatc cacctcgtcg ccttttctc	49
---	----

<210> 16
 <211> 795
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> DEVDins of Bio-sensor

<400> 16 atggtgagca agggcgagga gctgttcacc ggggtgtgct ccatcctggt cgagctggac	60
ggcgacgtaa acggccacaa gttcagcgtg tccggcgagg gcgagggcga tgccacctac	120

100528.0007US1_ST25

ggcaagctga	ccctgaagtt	catctgcacc	accggcaagc	tgcccgtgcc	ctggcccacc	180
ctcgtgacta	ccttcgggcta	cggcctgatg	tgcttcgccc	gctaccccca	ccacatgaag	240
cagcacgact	tcttcaagtc	cgccatgccc	gaaggctacg	tccaggagcg	caccatcttc	300
ttcaaggacg	acggcaacta	caagacccgc	gccgagggtga	agttcgaggg	cgacaccctg	360
gtgaaccgca	tcgagctgaa	gggcatcgac	ttcaaggagg	acggcaacat	cctggggcac	420
aagctggagt	acaactacgg	tggtaccgcc	atcaagaatg	aaggaaagag	aaaaggcgac	480
gaggtggatg	gaacagatga	agtggccgct	agcaacagcc	acaacgtcta	tatcatggcc	540
gacaagcaga	agaacggcat	caaggtgaac	ttcaagatcc	gccacaacat	cgaggacggc	600
agcgtgcagc	tcgccgacca	ctaccagcag	aacaccccca	tcggcgacgg	cctcgtgctg	660
ctgcccgaca	accactacct	gagctaccag	tccgccctga	gcaaagaccc	caacgagaag	720
cgcgatcaca	tggtcctgct	ggagttcgtg	accgccgccg	ggatcactct	cggcatggac	780
gagctgtaca	agtaa					795